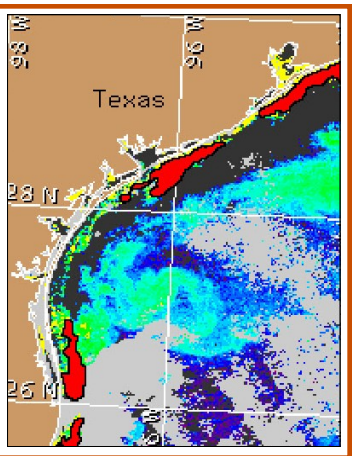
Harmful Algal Bloom Operational Forecast System (HAB-OFS)

Harmful algal blooms are a frequently occurring natural hazard with severe impacts to the health of humans, ecosystems, and regional economies. NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) has issued operational harmful algal bloom (HAB) forecasts for the eastern Gulf of Mexico since 2004. In 2010, HAB forecasts for the western Gulf of Mexico became operational, alerting coastal managers to the potential presence of new HABs, changing bloom conditions, and possible impacts. The success of the Harmful Algal Bloom Operational Forecast System (HAB-OFS) requires extensive collaboration within NOAA, and with federal, state and local natural resource and public health agencies.



HAB-OFS: WESTERN GULF OF MEXICO

http://tidesandcurrents.noaa.gov/hab

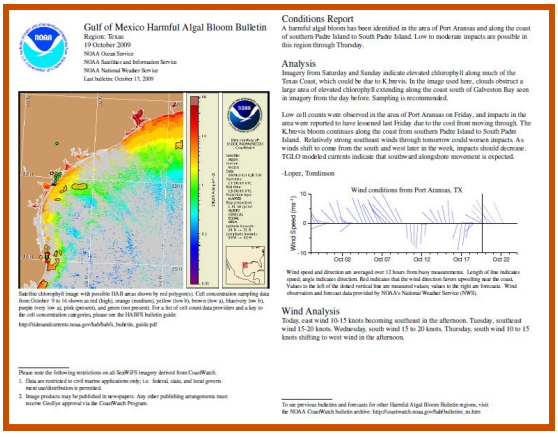
HABs: A Hazard in the Gulf of Mexico

Blooms of the toxic harmful algae, *Karenia brevis* (commonly called "red tides"), occur nearly every year in coastal regions of the Gulf of Mexico and cause potential public health, economic, and ecological impacts, including: **neurotoxic shellfish poisoning (NSP)**, **respiratory distress**, **shellfish bed closures**, and **marine animal deaths**.

HAB-OFS Texas Bulletin Provides Early Warnings of HABs

The HAB-OFS Texas bulletin is a decision support tool that provides early warning of the development, movement, and impacts of *K. brevis* blooms along the Texas coast, allowing coastal resource managers to better coordinate bloom response efforts and effectively mitigate impacts.

The HAB-OFS bulletin provides a detailed scientific analysis of **satellite ocean color imagery**, **water samples & health reports**, **meteorological and oceanographic data**, and **transport models**. A critical component of the bulletin is the integration of this data into **forecasts** for bloom **transport** and **coastal impacts**.



Gulf of Mexico Harmful Algal Bloom Bulletin
Region: Texas
19 October 2009
NOAA Ocean Service
NOAA Satellites and Information Service
NOAA National Weather Service
Last bulletin: October 15, 2009

Conditions Report
A harmful algal bloom has been identified in the area of Port Aransas and along the coast of southern Padre Island to South Padre Island. Low to moderate impacts are possible in this region through Thursday.

Analysis
Imagery from Saturday and Sunday indicate elevated chlorophyll along much of the Texas Coast, which could be due to K.brevis. In the image used here, clouds obstruct a large area of elevated chlorophyll extending along the coast south of Galveston Bay seen in imagery from the day before. Sampling is recommended.

Low cell counts were observed in the area of Port Aransas on Friday, and impacts in the area were reported to have lessened last Friday due to the cool front moving through. The K.brevis bloom continues along the coast from southern Padre Island to South Padre Island. Relatively strong southeast winds through tomorrow could worsen impacts. As winds shift to come from the south and west later in the week, impacts should decrease. TGLO modeled currents indicate that southward alongshore movement is expected.

-Lopez, Tomlinson

Wind conditions from Port Aransas, TX

Wind Speed (m/s)

Oct 02 Oct 07 Oct 12 Oct 17 Oct 22

Wind speed and direction are averaged over 12 hours from buoy measurements. Length of line indicates speed; angle indicates direction. Red indicates that the wind direction favors upwelling near the coast. Values to the left of the dotted vertical line are measured values; values to the right are forecasts. Wind observation and forecast data provided by NOAA's National Weather Service (NWS).

Wind Analysis
Today, east wind 10-15 knots becoming southeast in the afternoon. Tuesday, southeast wind 15-20 knots. Wednesday, south wind 15 to 20 knots. Thursday, south wind 10 to 15 knots shifting to west wind in the afternoon.

Satellite chlorophyll image with possible HAB areas shown by red polygon(s). Cell concentration sampling data from October 9 to 16 shown as red (high), orange (medium), yellow (low 8), brown (low a), blue/grey (no 8), purple (very low a), pink (present), and green (not present). For a list of cell count data providers and a key to the cell concentration categories, please see the HABS bulletin guide:
http://tidesandcurrents.noaa.gov/habhab8_bulletin_guide.pdf

Please note the following restrictions on all SeaWiFS imagery derived from CoastWatch.
1. Data are restricted to civil marine applications only; i.e. federal, state, and local govern. ment use/distribution is permitted.
2. Image products may be published in newspapers. Any other publishing arrangements must receive GeoEye approval via the CoastWatch Program.

To see previous bulletins and forecasts for other Harmful Algal Bloom Bulletin regions, visit the NOAA CoastWatch bulletin archive: http://coastwatch.noaa.gov/hab/bulletins_us.htm

The bulletin is disseminated via e-mail to registered Texas coastal managers twice weekly during HAB events and once weekly during inactive periods. To request subscription, please contact **hab@noaa.gov**.

Public Access to Conditions Reports

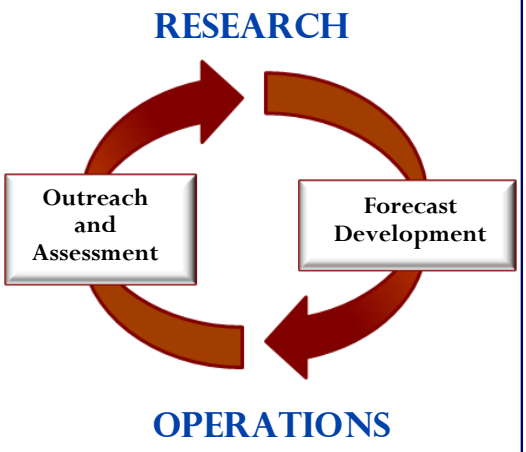
The HAB-OFS provides public access to daily red tide conditions reports, helping individuals to make informed decisions about beach-going activities. The public reports, along with archived bulletins, are publicly available on the HAB-OFS website at **http://tidesandcurrents.noaa.gov/hab/**.

Harmful Algal Bloom Operational Forecast System (HAB-OFS)

A Successful Collaboration

HAB impacts have escalated over the past 30 years throughout the coastal US. Recognizing this growing national threat, Congress passed the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 (amended in 2004), which authorized NOAA and federal agencies to address this problem.

The HAB-OFS is an ongoing project that depends on the dedication, energy, and feedback of individuals from partner agencies, users, and numerous other organizations working on this issue in the Gulf of Mexico. Continual research and development is vital to operational forecasting success and advancement.



Partners and Data Providers

Forecast Analysis & Operations

NOAA Center for Operational Oceanographic Products & Services (CO-OPS)

Research & Development

NOAA National Center for Coastal Ocean Science (NCCOS)

Academic & Scientific Community

Technology

NOAA Coastal Services Center (CSC)

NOAA Center for Operational Oceanographic Products & Services (CO-OPS)

In Situ Samples & Health Reports

Texas Parks & Wildlife Department (TPWD)

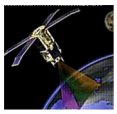
Texas Department of State Health Services (TDSHS)

Ocean Currents & Winds

Texas General Land Office Oil Spill Prevention & Response (TGLO)

NOAA National Weather Service (NWS)

Remote Sensing & Satellite Imagery



National Aeronautics and Space Administration (NASA)

GeoEye

NOAA National Environmental Satellite, Data, & Information Service (NESDIS)

The HAB-OFS is part of NOAA's Center for Operational Oceanographic Products and Services whose mission is the collection, analysis, and dissemination of integrated oceanographic information to protect life, property, and the environment.

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